



President's Message

by Tom Kinahan, N1CPE

We've got a few pressing amateur radio tid-bits to relay to you all, first of all the FCC has introduced an NPRM to greatly relax part 15 of the FCC rules that regulates low power transmitters. This would eliminate channelling for both CB bands at 27 and 49 MHz for low power transmitters and would also create a low power channelless CB band at 902 - 928 MHz. There would be no restriction on mode of operation. This would permit low power CB type devices operated in the 902 MHz band to communicate on licensed amateur repeater systems in this band. This is an incredibly stupid move by the FCC in my opinion.

Some of the products that manufacturers have on the drawing boards are things like wireless speaker systems for your Hi-Fi. Great Idea. Except that they are likely to operate at 49 MHz. Guess what happens when you tune up your 6m Kilowatt on 50.100 and try to work some E-skip or Meteor Scatter? You're friendly neighbors turn into a hoard of ongrly animals looking for dinner.

As you might expect in this age of deregulation, the FCC is also proposing to allow a much higher effective radiated power from these systems than is presently allowed at 27 and 49 MHz.

We'll let you know more information as it becomes available.

The FCC is expected to announce their decision on the fate of the 220 MHz ham band shortly. Expect some word early in the year. I've seen written words to the effect that they'll not take privileges away, and others that say they will. I am sure that they've never seen so many comments on any one rules change as this.

See you at the first meeting in December when we'll make the drawing for the membership raffle. Each member that gets their dues in to the club before the end of November will be entered once. Additional tickets may be purchased for 3 for \$1 up until the drawing.

If you haven't already paid your dues for this year, this will be your final newsletter. Please remember to send your \$15 to the club address, 211 Washington St. Wellesley, Ma. 02181. Please use the membership form at the end of November's newsletter. We really need the information that it asks.

Please let us know if you are an ARRL member, and if you want to renew your ARRL membership, please make your check out to the Wellesley A.R.S. and send it to the club address with your application form, and we will forward it to the League on your behalf. This way, we make \$2 on each membership.

Please also let us know if you've become an ARRL member since you've joined the club.

Finally, I want to wish you all a very happy and healthy holiday season.

W1TKZ Sweepstakes

W1TKZ was active in the November Sweepstakes event. Many thanks to Bill KA1QWE, Peter KA1PQY, Bill N1EHM, DJ N1FCR, Roger N1EYZ, and Vern ND1Z for participating. Also many thanks to Liz KA1PNA for providing snacks. We had about 200 QSOs on all the bands from 75 meters to 10 meters (excluding WARC bands).

MEETINGS THIS MONTH:

December 3, 1987 at 7:30 P.M.
December 17, 1987 at 7:30 P.M.
211 Washington St., Wellesley

Special recognition belongs to Bill KA1QWE. He volunteered for the overnight shift at the Red Cross. Bill worked diligently on 75 and 40 meters. This is quite impressive considering that this NOV SS was Bill's first contest.

New ground was broken in contest technology. Question: How do you break into a pile-up when the CQ station is from Texas? Answer: You fake a Texas accent. It worked for W1TKZ. But maybe the accent sounded more like Jimmy Carter than Lyndon Johnson. But it did work just the same.

The effort to count points, find dupes, and produce the final report is now in progress. We will not be a NOV SS winner, but it is most satisfying to work together as a team and enjoy a little contesting.

Twass the Night before Christmas

(Editor's Note : This month we have not one, but two poetry entries for the newsletter !! I couldn't make up my mind about which to publish. So here are both limerics which oddly enough are based on the same Christmas story. Give your Editor a hand and cast your vote on the QSL card questionnaire at the end of the newsletter. Next month I will publish the winner and author's name.)

Poem #1

Twass the night before Christmas,
When all through the house,
The only noise heard,
Was Dad on the air.

The Antennas were hung,
Off the chimney with care,
In the hope that the North Pole,
Soon would be less rare.

The kids in their beds,
Mom as she has come to expect,
But Dad can't resist,
The lure of good DX.

When through the phones,
the sounds were heard,
Of Old Saint Nick,
If only just a word.

Dad had heard Santa,

If just this once,
For he could tell,
The other DX chasers would pounce.

So that is the story,
Of one Christmas Eve,
When Santa was on,
Twenty Meters

Night Before Christmas

Poem #2

Twass the night before Christmas,
and all through the band.
Not a station was stirring,
not even a beacon.

The dipoles were hung
by the chimney with care.
In hopes that an opening
soon would be there.

Mama in her kerchief,
and I with my headphones.
Had just settled down for long DX contest.

When what to my wondering ears do appear.
But 'CQ CQ de NorthPole'.
I jumped to the key to give a reply.
For I knew in a flash that it must be St
Nick!

His fist was perfect; His signal was steady.
And when he 'Hi Hi'd', my rig jumped
like a bowl full of jelly.

No QSL-Via-Buro he did give.
But promised to deliver it
this very night.

His final message to all who could copy was
'Merry Christmas To All
And To All A Good Night!'

Calendar ! ! !

● December 3 : W.A.R.S. Meeting ... 7:30 P.M.
... Wellesley Red Cross.

● December 17 : W.A.R.S. Meeting ... 7:30 P.M.
...

The Spark Gap

Official Journal of the Wellesley Amateur Radio Society

Editor :

Jon Freeman, KC1FD
47 East Meadow Road
Lowell, Ma. 01854

The Spark Gap is a monthly publication of the Wellesley Amateur Radio Society, its sole purpose is to keep its members abreast of current happenings, FCC rule & regulation changes and to list equipment offered for sale or trade by members. Members are encouraged to contribute to the Spark Gap and may send their articles to the Editor's address or to the club address. Items printed in the Spark Gap may be reprinted by other Amateur Radio publications provided the author and the Spark Gap are given credit.

The Wellesley Amateur Radio Society is dedicated to the promotion of Amateur Radio through instruction, fellowship, demonstration and participation. Annual membership in the society is \$15 and the club year runs from September 1 through August 31. Amateur Novice through Advanced classes are conducted regularly at no cost. To enroll in a class or gain information about the Society in general, write :

The Wellesley Amateur Radio Society
211 Washington Street
Wellesley, Ma. 02181



Transistor Co-Inventor Dies

Walter Brattain, coinventor of the transistor died on October 13 at the age of 85 years. In 1947 Mr. Brattain invented the point-contact transistor with John Bardeen and William Shockley at Bell Laboratories.

Mr Brattain spent 28 years with Bell Labs. Besides the transistor, he made discoveries in the areas of photoelectric effects, magnometers, infrared detectors, and piezoelectric frequency standards.

New 220 Mhz Repeater

There will be a new 220 Mhz repeater in Chelmsford soon. The Macom Amateur Radio Club (M.A.R.C) is currently building an FM repeater. It is expected to be on the air by Mid-December.

The repeater's output frequency is 223.66 and its input frequency is 222.06. It has been coordinated with the official committee. Although it lies outside of the

Novice sub-band, the group is expected to receive permission to move to Novice-Land sometime next year.

The repeater site is atop the Macom building on the east side of Chelmsford, near the intersection of routes 129 and 3. The Macom company has been generous in donating the site, electricity, and test equipment. In appreciation the group has named the club after Macom.

The new repeater will be open and all are invited to try it out and say hello to the group. M.A.R.C membership is open to all. Dues are \$ 20 annually. Memberships and donations are important in light of the big cost of getting a new repeater on the air. For more information, contact Matt, KA1PHA at 38 Jackson Street, Ayer, MA. 01432. Matt's evening telephone number is 772-5567. He may also be found on the Marlboro 146.61 repeater.

Membership Raffle Results

The W.A.R.S. Membership Raffle was held during the meeting on December 4th, 1987 and the winners are as follows:

1987 ARRL Repeater Directory - Jerry Driscoll, KA1000 and Joe Green, K2VUI

W1FB Antenna Notebook - Ralph Vacca, W1KF

QRP Notebook - Jim Charboneau, KC1BB

Heathkit Antenna Dummy Load - Charles Stevens, KA1DHV

All prizes are being stored at the club station. If you've won, please stop by at a club meeting to claim your prize. Our thanks to Heathkit of Wellesley on Route 9 for their support of this raffle.

OFFICERS

President

Tom Kinahan, N1CPE, 877-3456

Vice President

Rita Baker, N1DDI, 481-0863

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Roger Smith, W1EOA, 235-6239

Corresponding Secretary

Kathy Pate, KA1IYR, 785-1801

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Fund Raising

David Kent, N2AWG, 875-2126

Operations Chairman

Vern Valero, ND1Z, 533-6822

Police/Amateur Relations :

Reporting Hints

by Frank, NG1I

With all the two meter rigs now out on the roadways, a great potential now exists to create a crime reporting network which is unsurpassed by any other communications network.

Considering the ratio of police cruisers to 2 meter mobiles (the proof ? "never a cop around when you need one") it becomes necessary to establish a few reporting guidelines to achieve effective and accurate reporting.

How should a ham react to crimes in progress ? The guidelines listed below are just that ... guidelines. Every situation demands a different slant in how it is handled. These tips will keep you, the ham, out of trouble and away from the civil and criminal court rooms and those highly motivated attorney types (some people have a direct line to Jim Sokolove !)

1. Call the report in accurately. Don't add unnecessary or confusing details. Simply give a clear, concise, factual description of the incident.
2. Give the best possible description of the vehicle you can. Get the plate number — this is most important and useful to the police as the computer can get the info fast. A description of the vehicle, though secondary, is also helpful as many plates are attached to vehicles to which they don't belong.
3. Do NOT grab, confront, demand info, or threaten in any way ! You could be sued for assault, assault and battery, and/or illegal detention (false arrest). Placing hands on somebody constitutes arrest. Simply report what you see. The police are covered by Mass Tort Law in regards to lawful detention of citizens; you are not.
4. When the police arrive, don't confront them unless you are rendering medical assistance; they don't know the 'good guys from the bad guys' yet.
5. If you're following a car that is ultimately stopped by the police, stay several car lengths behind. When all is under control, then you may identify yourself and your involvement. This act alone can 'make or break' a case.

In conclusion, if you follow these guidelines, your

assistance will truly be assistance and your obligation, of public service to ham radio achieved.

TNX, Frank NG1I

(Editor's Note : Frank is an officer with the Wayland Police Department, in case anyone isn't aware of it.)

Churchill's Wizard War:

Part I Radar And Fuses

by Vern Valero

After his first retirement from politics in 1945, Winston Churchill settled down to write a multi-volume narrative of the second world war. In it he introduced the term 'Wizard War' in referring to the many scientific inventions that greatly affected the outcome of the war.

Never before in history had the pace of advanced so much during a war. By 1945, the a clear advantage in part because of a fortuitous investment in science and technology.

Radar played an essential role in the war effort. It enabled the British to hold their own against the German blitz bombing of 1940. It also gave the Allies great strategic advantage in liberating the occupied countries.

Each of the major warring nations had radar research efforts. The combined British and US effort was the most successful. It resulted in mass production and deployment of many effective types of radars.

The Japanese had a parallel radar research effort by the army and the navy. There were 2500 radar sets in various stages of test and development by war's end. A major stumbling block to successful deployment was antagonism between the army and navy. This lack cooperation resulted in parallel development and no sharing of research results.

The Germans were plagued by a 'blitzkrieg' mentality. Hitler believed that the war would be won very quickly and that there was no need for major research. As a result, many scientists were sent out into battle. By the time this mistake was realized, it was too late.

Germany did produced 125 Mhz and 560 Mhz radars. VHF

radars do not produce the clarity that microwave units can. Very little attention was paid to radar until late in the war when a British plane with microwave radar was captured. The Germans then began microwave research, but it was far too late.

The United States had been researching radar. This research was in progress at General Electric, Bell Labs, and MIT by 1941. UHF units had been deployed, but they suffered a similar lack of clarity as the VHF units.

The British excelled in radar development. By 1941 they had invented the magnetron cavity tube for microwave radar. The cavity was presented to the Naval Research Lab in the US. A combined British and US effort resulted in the introduction of many sophisticated radar products.

In general, the rapid development and manufacturing of radar sets gave the Allies a decided advantage over the Axis nations.

There was a very serious problem with regard to bombs, shells and torpedoes. They sometimes didn't explode, not a very efficient way to run a war.

The component of a bomb or shell that set-off the explosion is the fuse mechanism. Old style fuses were of the contact variety. When the projectile made contact with the target it exploded, or was supposed to. These contact fuses were quite unreliable. This resulted in many unexploded bombs and shells. The situation with US torpedoes was even worse. A US submarine would launch a torpedo at an enemy ship. The torpedo would simply bang up against the side of the ship as a warning to the captain.

Researchers at Carnegie Institute invented a subminiature tube with the ability to detect itself approaching a target. Use of these proximity fuses increased the Allied hit rate considerably.

The next part of this series will investigate radio navigation, sky mines, and the V1 and V2 rockets.

Sources: 1. The Second World War: Volume II,
Churchill, Houghton Mifflin, 1949
2. IEEE Spectrum, November 1987

FCC Exam Opportunities

December 1 Acton, MA (W1QLT) 617-263-8742
December 12 Wilbraham, MA (K1BXE) 413-566-3010
December 12 Nashua, NH (KA1GOW) 603-882-9065
December 12 Windsor, VT (WB1GXM) 603-543-1389
December 18 Holyoke, MA (K01R) 203-623-4850
December 23 Cambridge, MA (WA2EYC) 617-646-1641

Proposed Changes to Part 15

Part 15 is the FCC rules on devices that radiate RF as a byproduct of their operation. Such devices are Television receivers, radio receivers, video recorders, personal computers, cordless phones, garage door openers and the like. The FCC has been getting large numbers of requests for modification to Part 15 to allow the marketing of various products. Due to the large number of requests and subsequent rules changes, the FCC has decided to review and simplify the part 15 rules. A noble cause, in my opinion. In simplifying and deregulating part 15 devices, they have increased the emitted rf levels throughout the HF bands and in fact created channelless CB bands all over the spectrum.

Specifically, the FCC has proposed a field strength limit of 30 uV/m at 30 meters. But, the Voice of America (VOA) has a standard which defines good reception of their signals in a target country of 1 uV/m. This means that you could be legally wiped out by a computer in your neighbor's house. Contrary to the stated goal of the proceeding, the field strength limit proposed for intentional radiators in the shortwave band may not be "sufficient to prevent harmful interference to authorized radio services."

No limits are set for unintentional emissions below 20 MHz, except from CB receivers. Noise from digital devices will get worse.

The proceeding creates channelless "CB" like bands at 49 MHz and 902-928 MHz. At 49 MHz, this rulemaking would allow low power "wireless speakers" from your stereo systems. Imagine what your 6 meter kilowatt will do to one of those.

At 902 MHz, the NPRM suggests creating a low power,

channeless, unlimited mode CB service not requiring a license. This is the likely place for 'TV Genies', devices that connect to your VCR and allow multiple television sets to watch the same tape. This would put some real nice low power TV pictures all over this band. Imagine for a minute, a ham repeater with some CB walkie talkies going at it on it's input frequency! This would all take place at the same time as the hams that try to use this band.

Proposed Section 15.29(b) reads: "The owner or operator of a radio frequency device subject to this Part shall promptly furnish to the Commission or its representative such information as may be requested concerning the operation of the radio frequency device." Since scanners, cordless phones and personal computers are RF devices, this overly broad rule could be construed as giving the Commission the right to ask a scanner owner to hand over frequency lists, a cordless phone owner to turn over records of phone calls, or, conceivably, a computer owner to show an FCC agent his software purchase receipts. Request for information would not even have to be based on a finding that the device had caused harmful interference. I think the sweep of this rule clearly needs to be limited to circumstances where there is an actual complaint of interference, and the FCC should only be entitled to information bearing directly on interference caused by an offending device.

I suggest that each and every one of you file comments on the proposed changes to part 15 soon. Just type your letter on a 8-1/2 x 11 inch paper, describing your involvement with radio and how the rules might affect you. State your views on any aspect of the proposals. Be sure to write "General Docket 87-389" clearly at the top of the first page and your address under your closing signature. Address your letter to:

Mr. William J. Tricarico, Secretary
Federal Communications Commission
1919 M St. NW - Room 222
Washington, DC 20554

We'll try to get a copy of the NPRM for everyone to read in the meantime. We understand that the deadline for filing comments as been extended until at least late January.

73, de Tom Kinahan, N1CPE

CRASH of '87

(or a Short Course on 20 meter Economics)

by Jon Freeman, KC1FD

Last week's decline on the 20 meter band is being closely watched by Hams throughout the world. During this period 20 meters suffered its most severe blow in 58 years. In the course of one day, the number of QSO's on the band declined by a whopping 500, the largest single day fall since the "Crash of '29." "Black Monday" was preceded by several days of declining QSO's with a large fall of 85 QSO's on Friday. On Monday, it looked like the bottom had fallen out. This decline is in sharp contrast to the gradual increases the band has enjoyed in the past 5 years.

Trading of 20 meter equipment was high all week throughout all the world's hamfeets and auction trading volume peaked on Monday with the item being the 20 meter dipole which fell to a low, average price of 75 cents. Prices of all equipment supporting 20 meters are reported to have fallen. One year old HF rigs costing \$1000.00 new, with 160-10 meters plus the WARC bands, had virtually lost all their value at 20 meters and were selling at \$800.00. Triband beams had lost nearly 30% of their value. Sales, and price, of 30 and 40 meter conversion kits were reported up.

The decline is attributed to the rising QSL deficit which has undermined the confidence of the market. In turn, a side effect is an increase in "spectrum" which tends to fuel the decline in a spiraling manner. Ham experts feel that the only way to get the band back on track is to cut back on the QSL deficit. Intervention is planned to help cut the rising QSL deficit on 20 meters. The President of the World QSL Bureau has decided to meet with a nonpartisan committee in order to adopt guidelines for curtailing the 20 meter QSL deficit.

Much of the blame for "Black Monday's" decline is attributed to computerized QSL'ing. Many of the commercially available QSL programs are biased to service rare DX first. Consequently, should an unusual

opening occur on 10 or 15 meters these programs will potentially ignore the 20 meter QSL's. Such a situation is suspect on Block Monday. The President of the World QSL Bureau declined to comment as to whether this practice would be allowed to continue.

QSL Cards

Both as a potential money raiser for the club and as a service to the members we are looking into offering personal QSL cards. There is a potential to pass along good prices due to volume ordering. The idea, however, is to tack on a nominal fee to printing costs which would go to the club coffers; roughly five dollars per order or so.

After starting with the idea of simple (and cheap) black on white we moved into some ideas of adding color. The current design is shown on the back cover of the newsletter. The idea includes a color W.A.R.S. logo (either blue or red) with the rest of the personal data printed in black. Some additional color can be added with color stock.

We need some input from you as to your interest in ordering any of these cards should they become available. Enclosed is a short questionnaire which will help us make decisions with regards to color as well. We need to adopt a standard format (only the personal data is variable) to take advantage of volume printing.

The stock which has been chosen is uncoated since the QSL report is on the front of the card. These cards are only printed on one side. After viewing several QSL samples in our file drawers (from that big list in OST) it appears that the printer's suggestion to use color stock is relatively unique. The price does not correspond to color either.

Personal orders would be limited to a minimum of 300 cards. We would need a minimum of four orders to send to the print shop. So, if you are interested please send in your questionnaire A.S.A.P.

QSL Card Questionnaire

This is only a survey form and does not obligate anyone to purchase anything. We simply want to find out if anyone is interested in a group purchase of QSL cards.

1. Give us an idea of how many cards you think you would like to buy ?

Quantity _____

2. I don't care about having any color in the cards I purchase and would be happy with black and white as long as its cheap. (check box) ☐

3. If you have an interest in the cards with color please answer the following questions. Please list the order of your preference for stock colors (from 1 to 4). Also check your preference for the color of the W.A.R.S. logo for each color of stock (blue or red).

Stock Color	W.A.R.S. Logo	
	Red	Blue
White		
Light Grey		
Light Blue		
Light Yellow		

4. Here's my vote for the poem of the month :

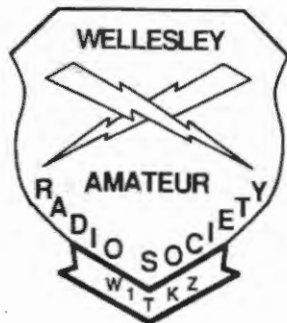
(check one)

☐ Poem #1

☐ Poem #2

Mail To :

Jon Freeman, KC1FD
17 East Meadow Rd.
Lowell, Ma. 01854



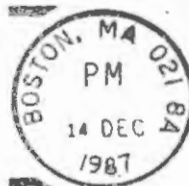
KA1NDX

Joe Q. Ham
599 Megahertz Drive
Kilowatt, Ma. 01234
Spark Gap County

Station	Date	UTC	Mode	Frequency	RST

Pse QSL Tnx

MARS AMSAT



The Spark Gap



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